Conservation Talk

The Hampton Conservation Commission Quarterly Newsletter

Image: Brianna O'Brien

73rd Annual Earth Day

On April 22, 1970, 20 million Americans (10% of the total population of the US at the time) demonstrated in the streets, speaking out against the impacts of the environmental crisis that resulted from over 150 years of industrialization and growth. Seventy-three years later our world looks very different because of that watershed moment. By the end of 1970, the United States Environmental Protection Agency (EPA) had been created, the National Environmental Education Act, the Occupational Safety and Health Act, and the Clean Air Act among other environmental laws had been passed. In 1972, the Clean Water Act was passed. In 1973, the Endangered Species Act was passed and soon after the Federal Insecticide, Fungicide, and Rodenticide Act. There is no doubt that the momentum of the first Earth Day saved countless people from disease and even death, countless species from extinction, and countless habitats and ecosystems from destruction.

Today, it is important to recognize the work is not done and the momentum should not stop. We are tasked, more than ever, with protecting our planet and our home.

Find ways to celebrate Earth Day and get involved or take action at earthday.org

Image: Brianna O'Brien

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Vernal Pools

It's vernal pool season! Vernal Pools and vernal streams are temporary wetlands. They are areas that can be saturated during some parts of the year and completely dry during the rest of the year. The word vernal means spring and generally vernal pools are most identifiable during spring months. They are vital breeding habitats for many amphibians and crustaceans such as wood frogs, spotted salamanders, and fairy shrimp, and are important feeding habitats for many other animals, including the state endangered Blanding's turtle.

In addition to being vital habitats for local plants and animals, vernal pools can also form corridors. These habitats can act as "aquatic stepping stones" within a larger habitat type, along which wildlife may travel. Without them, these creatures would be isolated and more vulnerable to threats or changes in their surroundings.

Because vernal pools are temporary, they are easy to miss, but they are protected under Hampton's Ordinances and by New Hampshire's environmental regulations. Vernal pools have great ecological significance in the health of our local ecosystem and wildlife communities. Keep your eyes out for them as you spend time outside this spring!

'Waves' of Shoreline Information

Tori Bamford, Hampton Coastal Resilience Coordinator


Image: Brianna O'Brien

Watching the waves come and go from the beach is relaxing and mesmerizing on a nice day in the summer, but what happens during storms when the waves are more intense? How is the Beach protected against the fast-moving water? During storms and higher high tides, waves can often be seen crashing against the seawalls from the road. These seawalls protect the roads, cars, and buildings behind them by deflecting kinetic energy from the waves. The seawalls owned by New Hampshire State Parks stretching from the edge of Bicentennial Park to just before Hampton Beach State Park also have a curve on the beach side that helps redirect wave energy.

On March 14th, Warrant Article 09 for a three-million-dollar bond article to rebuild the Bicentennial Seawall was passed by the voters. This is the sole expanse of seawall owned by the Town and has been standing since the 1940's. The only known archival record is a repair drawing by the Coast Guard from June 1950, seventy-three years ago. In 2016, the engineering firm Tighe & Bond investigated the physical state of the seawall and found that the concrete is disintegrating via a process called an Alkali Silica Reaction (ASR). Concrete with ASR has a greater risk of fracturing when in contact with water. They also found that erosion caused the seawall's footing lip to be only a few feet under the sand. Both findings suggest a severe loss of structural integrity. In response, the Department of Public Works (DPW) placed revetment (boulders) on the beach side of the wall to provide emergency stabilization. Prior to the warrant article passing, DPW worked with the New Hampshire Department of Environmental Services and the Army Corps of Engineers to renew permits received in 2018 that will allow the construction of the new wall. Some of the funds from the 2023 Warrant Article will be used to revisit the design plans from Tighe & Bond's report, ensuring that current building codes and construction costs are addressed.

Before the 2023 Deliberative Session, there was discussion around whether a living shoreline was considered as an option. This is a complex question. From a flood resilience and risk management perspective there are multiple ways in which shorelines can be protected; "no action" where we do not do anything, "avoid" where we keep out of risk zones, "accommodate" where we find ways to live with the water, "resist" where we keep the water out, and "relocate" where we move to higher ground. Living shorelines are defined by the National Oceanic and Atmospheric Administration as "a protected, stabilized coastal edge made of natural materials such as plants, sand, or rock," generally falling into the category of "accommodate" because they are systems that regenerate themselves. Seawalls and living shorelines protect the Town differently. Living shorelines, like sand dunes, absorb kinetic energy using a buildup of sand. This happens because native, salt-tolerant plants such as American beachgrass (*Ammophila breviligulata*) have dense root systems and underground stems called rhizomes that grow horizontally to stabilize dunes. As sand moves across the beach the beachgrass catches it causing the dune to grow. The bigger the dune, the more storm protection it offers. Dunes and other kinds of living shorelines require lots of space and healthy vegetation to be effective. Walking on or disturbing a living shoreline will trample down the sand and plants making them less able to absorb water. Seawalls are impervious structures that serve as a barrier to protect what is behind them, thereby generally falling into the "resist" category. Constant oncoming waves can structurally damage the walls and erosion will occur over time. While this approach is not regenerative, seawalls have long functional lives and protect the shoreline in a more developed environment where space is a precious resource.

Weighing the needs and the active use of this part of town, it was decided that a new seawall was the best solution for this location. If we moved forward with the design of a living shoreline, we would not have space for Bicentennial Park! Additionally, considering the wave action in this area, a living shoreline is unlikely to protect the surrounding infrastructure from flooding and the vegetation would struggle to survive. When thinking about sustainability, it is important to consider the full context and nuances of all options. Native, salt-tolerant plants, and impervious structures together can also be used to effectively protect the shoreline. At Bicentennial Park, the beachgrass between Ocean Boulevard and the seawall is preserved so that in combination with the wall they protect our community as a hybrid approach.

Action Item:
Citizen science for curious people

To test how the kinetic energy from waves affects different kinds of shorelines, all you need is a golf ball, a rubber ball, or a ping pong ball. The ball will act as the hypothetical wave. Go to the beach where there is a seawall or revetment and toss the ball at the impervious surface. What did you observe? Now toss the ball at the sand. What did you observe this time?

NOTE: If you go to Hampton Beach State Park or another beach with dunes or other types of living shorelines, walking on them is prohibited. These are very delicate ecosystems, even slight disturbances make them less effective at absorbing water. Living and hybrid shorelines also create essential habitat for animals like the endangered Piping Plover (*Charadrius melodus*)!

Spring nuisances

Spring brings some of our favorite things like flowers, sunshine and warmer weather, but it also brings some of our least favorite things: pests and weeds. As you gear up for your spring activities, take the time to get to know two very unpopular spring guests: Black legged ticks (also known as deer ticks) and Japanese knotweed.

Most people think of ticks like the Big Bad Wolf (and they should). Avoiding ticks is always your best bet. But how do you do that? When you're in tick-prone areas (tall grasses or unmanicured natural areas), wear long pants and socks and consider tucking your pants into your socks for added security. Use insect repellent on clothing and boots. And always perform a tick check after you have been outside. pay special attention under the arms, in and around the ears, inside the belly button, in the back of the knees, in and around hair, between the legs, and around the waist. If you find a tick attached to your body, remove it as soon as possible. For more information visit: UNH Extension Biology and Management of Ticks in NH.

Image: Shenandoah National Park

Image: Maine Natural Areas Program

While you don't have to worry about Japanese knotweed biting you, you should be just as alert. Japanese knotweed is an extremely invasive plant that can wreak havoc on not just the native ecosystem but also roads and even building foundations. The plant is not difficult to identify. It grows up to 10 ft tall in tight clusters on robust but hollow stems that look like bamboo. It can grow in nearly any environment and can spread from even the smallest piece of rhizome (root) making it extraordinarily difficult to eradicate or control.

Although it is a challenge, if you find this plant on your property, you are strongly urged to try to control it. For many areas, the best control method is frequent, low mowing, which will at minimum prevent the spread of the plant and at best, eventually weaken the growth and spread of the rhizomes (roots). Another method is smothering. The recommendations for this approach vary but the general consensus is that to smother, wait until early summer and cut the stems close to the ground and cover the area with a heavy black tarp or erosion control fabric. You can cover the material with mulch for added effect and to improve the appearance. Smothering can take upwards of five years or longer to truly get rid of the plant.

Digging up the roots is not suggested because digging can lead to root fragments that can repopulate the area.

It is extremely important, whatever method of control you use, that every piece of debris is carefully picked up, tied in a garbage bag and disposed of. Japanese knotweed cannot be disposed of at the Hampton Transfer station brush pile and it is not wise to try to let it decompose on your own property.

Upcoming Events of Interest to Local Environmentalists:

Wild & Scenic Film Festival- The Music Hall, Portsmouth April 14, 7-9pm | $20

Celebrate the wonder of nature at the 13th annual Wild & Scenic Film Festival! This year's films combine exceptional filmmaking, beautiful cinematography, and first-rate storytelling to inform, inspire and ignite solutions and possibilities to restore the earth and human communities while creating a positive future for the next generation. Attendees can expect award-winning films about nature, community activism, adventure, conservation, water, energy and climate change, wildlife, environmental justice, agriculture and more.

Hampton Garden Club's Annual Plant Sale and the Hampton Conservation Commission's Rain Barrel Silent Auction- Center School Front Lawn, May 20 9am-12pm

Sarah Edgar's Winnacunnet art students have painted rain barrels to auction off at the Garden Club's annual Plant Sale. Rain barrels collect roof run-off so it can be used for watering lawns and gardens. Barrels help to minimize storm water run-off that can pollute streams, wetlands, marshes and the ocean. Thank you to the Conservation Commission's generous sponsors for helping to make this event possible: Aquarion Water Co. for the rain barrels, Wicked Awesome Paint & Wallpaper for the paint, and Wayne's Autobody for the protective seal-coating.

Seabrook Hampton Estuary Alliance (SHEA) Coastal Resilience & Resource Fair- Center School Gymnasium, May 20 9am-12pm

A two in one! Same place and same time as the Plant Sale, this event aims to educate, inspire, and empower coastal residents and property owners about the critical functions of our natural resources. There will be opportunities to learn how modifying certain everyday behaviors and actions can help protect those important resources. This will also be an educational opportunity to better understand the potential impacts of sea-level rise and climate change and highlight local resilience-building initiatives and property-level adaptation strategies.

Piscataqua Region Estuary Partnership (PREP) State of Our Estuaries Conference- Portsmouth, NH, June 2

Every five years, PREP produces a State of Our Estuaries report that examines environmental and social indicators of estuarine health, such as bacteria levels, nutrient concentrations, toxic contaminant levels, abundance of shellfish, and land use in the coastal watershed. By examining long-term data sets compiled from a variety of organizations, the report describes the current status of the Great Bay and Hampton-Seabrook Estuaries and suggests trends for the future. The report is designed to provide readers with a holistic understanding of the Piscataqua Region Watershed so that they may make informed land use and resource management decisions. Join PREP on Friday June 2nd, 2023 for an all-day discussion of learning and creative thinking about how we can support our collective work moving forward. Stay tuned to PREP's website and newsletter for registration details! Registration opens April 10.

What we're reading...

Book: *Silent Spring*- Rachel Carson

Book: *All We Can Save: Truth, Courage, and Solutions for the Climate Crisis*- Edited by Dr. Ayana Elizabeth Johnson & Dr. Katharine K. Wilkinson

Article: Top 10 Earth Day Events of 2023
Earth Day takes place in more than 190 countries around the globe and is the most widely observed nonreligious holiday in history. This list of events will bring you hope and inspiration.


Image: Brianna O'Brien

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